

# Ultraviolet Technology

*...for  
swimming  
pool purity*



**Hanovia**  
WORLD CLASS UV

'the UV disinfection process has made a fantastic difference to the water and air quality of the pool areas.' Alan Webb, Spelthorne Leisure Centre, UK

'a very clean and efficient way of killing bugs.' Norman Buck, University of East Anglia, UK



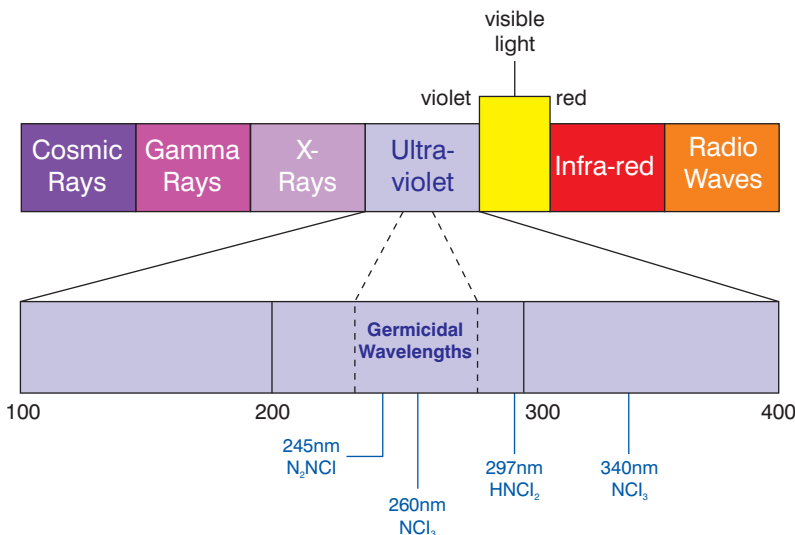
UV is part of the electro-magnetic spectrum which includes visible light. Concentrated sunlight contains UV which is a powerful natural disinfectant.

Hanovia has been the world leader in ultraviolet equipment for purification of drinking water and water for industrial use for over 75 years. Now the same expertise and high quality equipment is available for the treatment of swimming pool water.

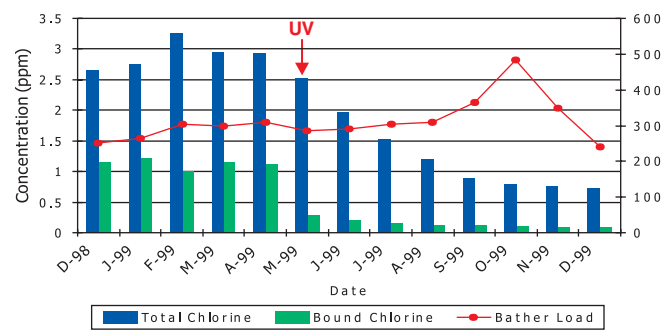
## swimming pool water purification with UV

Hanovia equipment is effective within the guidelines of the Pool Water Advisory Group and allows safe reduction in residual chlorine levels to the new recommendations, whilst achieving a total to bound ratio > 4:1.

Max. Combined Chlorine Levels	
Germany	0.20 ppm
Denmark	0.20 ppm
Italy	0.30 ppm
Sweden	0.40 ppm
Norway	0.50 ppm



Effective Control - Hobart Aquatic Centre, Tasmania



## Benefits of UV

The primary action of UV is to kill bacteria, viruses, moulds and their spores, thus reducing the risk of transmission of stomach, skin and respiratory tract infections to bathers. UV has an important secondary action: it initiates photo-chemical and photo-oxidation reactions which destroys chloramines, a range of compounds responsible for unpleasant smells in pools. This is particularly important in leisure pools where features such as water slides and waves give a greater surface area for the release of chloramines into the air; UV reduces the burden, making the atmosphere safer and more pleasant. Total to bound ratio of > 4:1 are typical of pool water treated by Hanovia UV.



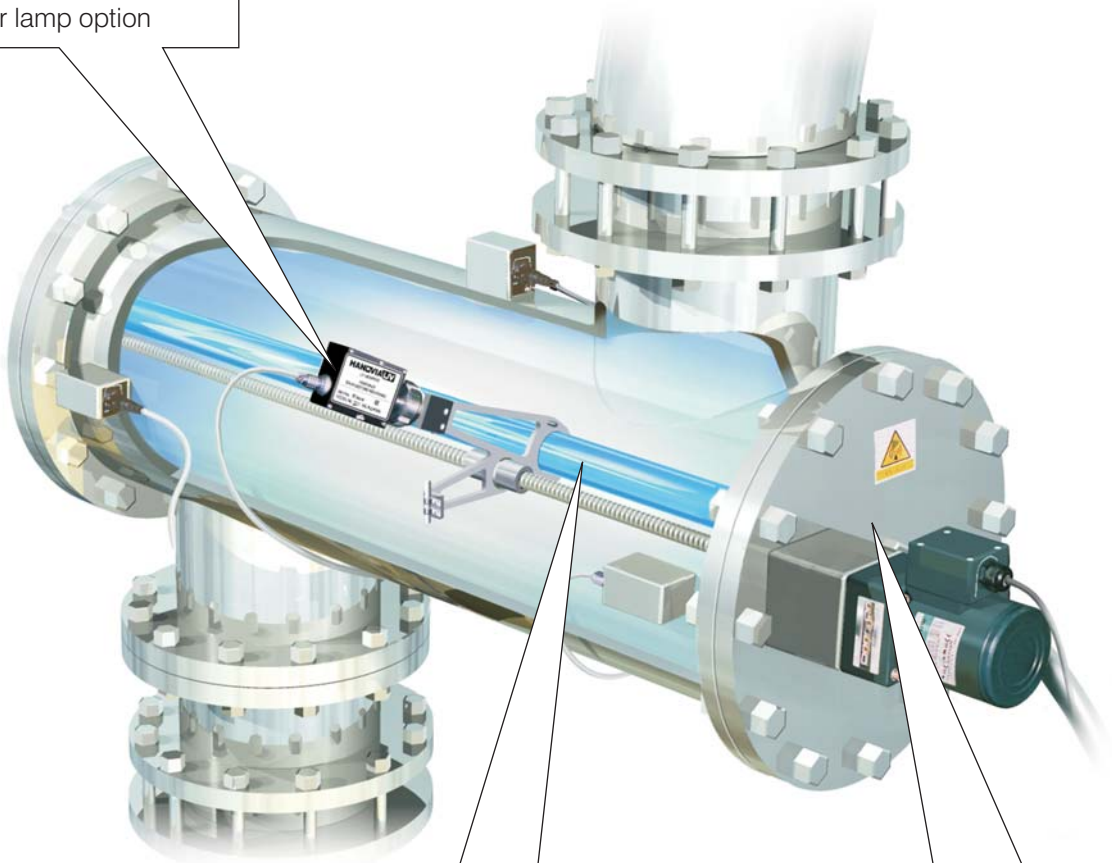
# the Hanovia system

## THE MONITOR

Provides continuous output measurement of each UV lamp in treatment chamber and keeps system running at maximum efficiency. With any change in process conditions, the system can be designed to:

- ▶ Switch to new power level
- ▶ Initiate a local or remote alarm
- ▶ 1 monitor per lamp option

In the treatment room, the entire pool volume re-circulates through the Hanovia chamber where it is purified by UV. The only moving part is the automatic wiper, which keeps the quartz sleeve free from deposits.



## THE PHOTON II CONTROL

The Photon control system from Hanovia is a revolutionary new microprocessor-driven control module offering:

- ▶ Full traceability
- ▶ Data logging - up to 12 months
- ▶ A menu-driven interface
- ▶ Real time display of performance parameters
- ▶ Download to RS232 Interface

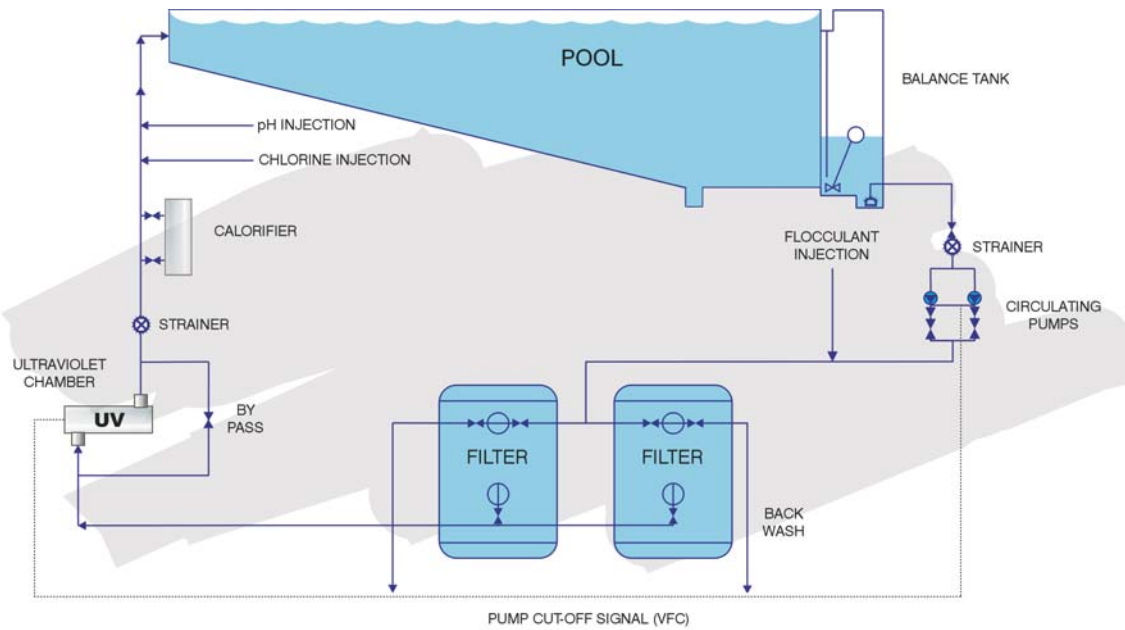
## ARC TUBE

- ▶ Up to 6 Arc Tubes per chamber
- ▶ Simple to replace
- ▶ Hanovia is the only UV systems supplier to manufacture its own Medium Pressure Arc Tubes. This facility has enabled development of powerful medium pressure Arc Tubes which are rich in the wavelengths necessary for disinfection and chloramines destructions
- ▶ All Hanovia Arc Tubes are manufactured and tested to international standards

## THE TREATMENT CHAMBER

- ▶ Capacity up to 1,500m<sup>3</sup> per hour for a single Photon<sup>®</sup> chamber
- ▶ Interior mirror finish to highest standards, welds polished
- ▶ 316L stainless steel construction
- ▶ Quartz sleeve(s), mounted axially, houses Arc Tube(s) and permits replacement without interrupting flow
- ▶ Automatic wiper maintains disinfection efficiency, even for poor quality fluids
- ▶ Optimum hydraulic design for uniform treatment
- ▶ Dose models independently validated with bioassay testing worldwide

## FLOW DIAGRAM FOR SINGLE POOL WITH ULTRAVIOLET DISINFECTION



### HANOVIA SYSTEM STAND ALONE

- ▶ Simple and completely reliable
- ▶ Hanovia UV systems do not require daily maintenance
- ▶ Systems are fully monitored to ensure the correct dose of UV
- ▶ Alarmed for the unlikely event of UV tube failure
- ▶ Hanovia's systems interface with Building Management System
- ▶ Range of sizes to suit different demands
- ▶ Minimal space requirements

### UV IS SAFER AND PROVIDES THE BEST ENVIRONMENT FOR EVERYONE INVOLVED

- ▶ UV is effective against all pathogens including emerging pathogens such as *Cryptosporidium*
- ▶ Provides excellent water quality and a more pleasant bathing environment
- ▶ Treats full recirculating flow
- ▶ Reduces the amount of chemicals required, typically by 50%
- ▶ No breathing apparatus required
- ▶ UV is not hazardous

### MAINTENANCE

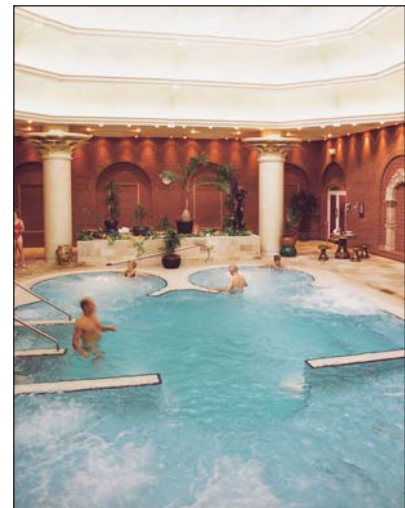
- ▶ Very simple and infrequent
- ▶ Arc tubes changed only once a year
- ▶ Arc tube replacement takes 5 minutes
- ▶ Maintenance can be carried out by on-site personnel

### LOW COST

- ▶ Lower Capital investment than other comparable technologies
- ▶ Considerable savings on chemicals, electricity, maintenance and personnel
- ▶ Simple installation and operation
- ▶ Available for new builds or as a retrofit to older pools
- ▶ No additional filters, contact vessels or pumps required
- ▶ Timers used for night shut-down

### PROVEN TECHNOLOGY

- ▶ Hanovia system installed at hundreds of pools across the globe
- ▶ Same technology used to disinfect drinking water
- ▶ Treated water quality exceeds highest international standards



### TECHNICAL AND SALES SUPPORT STAFF

Our highly trained sales and service staff help you select and install the best plant for your needs. Our comprehensive after-sales service includes a full range of spares and ongoing professional technical backup, with an optional service contract.

# Hanovia

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